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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,152	09/15/2003	Kanji Imai	10873.477USD1	2149
23552	7590	03/19/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			PERRY, ANTHONY T	
			ART UNIT	PAPER NUMBER

2879

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,152

Applicant(s)

IMAI ET AL.

Examiner

Anthony T Perry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 11/003,789.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/15/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The Amendment, filed on 9/15/03, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-8 has been entered.

Drawings

Fig. 7 is objected to because the anode wiring is not shown. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claims 9-13 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Anode wiring is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The current application teaches that the image display device is matrix-driven between the stripe-shaped cathode wiring 35 and the anode wiring 34 contacting the phosphor layer 33 (see page 22, lines 10-13).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Uemura et al. (US 6,239,547).

Regarding claim 9, Fig. 12 of the Uemura reference discloses an image display device that comprises a vacuum container, a phosphor layer 1211, electron-emitting elements 1205, a substrate provided with cathode wiring 1202 patterned into stripes, and anode wiring 1210 that has electrically separated stripes that are arranged in a plane substantially parallel to the cathode wiring and that extend substantially perpendicular to the stripes of the cathode wiring.

The Examiner notes that the claim limitation that the electron emitting elements are “made by.... a carbon ink made into a paste with an organic binder and a solvent.... and firing the ink” is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Nevertheless, Uemura teaches electron-emitting elements made by firing a paste that comprises carbon nanotubes, support particles, a binder, and a solvent (see col. 11, line 57 – col. 12, line15 and col. 16).

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Regarding claim 12, the substrate 1201 is integrated with the vacuum container (see Fig. 12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al. (US 6,239,547).

Regarding claim 10, Fig. 12 of the Uemura reference discloses an image display device that comprises a vacuum container, a phosphor layer 1211, electron-emitting elements 1205, a substrate 1201 provided with cathode wiring 1202 patterned into stripes, and anode wiring 1210 that has electrically separated stripes that are arranged in a plane substantially parallel to the cathode wiring and that extend substantially perpendicular to the stripes of the cathode wiring.

The Examiner notes that the claim limitation that the electron emitting elements are “made by.... a carbon ink made into a paste with an organic binder and a solvent.... and firing the ink” is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Nevertheless, Uemura teaches electron-emitting elements

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made by firing a paste that comprises carbon nanotubes, support particles, a binder, and a solvent (see col. 11, line 57 – col. 12, line 15 and col. 16).

Uemura further teaches the use of gate electrodes 1206 having electrically separated stripes arranged in a plane substantially parallel to the stripes of the cathode wiring 1202 and between the phosphor layer 1211 and the substrate 1201.

Uemura does not explicitly teach the gate electrode stripes extending substantially perpendicular to the cathode stripes. However, it is noted that the applicant's specific direction in that the gate electrode stripes extend, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any direction for the gate electrodes to extend as long as it surrounds the opening exposing the electron-emitting elements.

Regarding claim 11, Uemura does not specifically state that control electrodes are used in the display device. However, it is well known in the art of FEDs to use control electrodes between the phosphor layer and gate electrodes in order to avoid expansion of electron beams emitted from the emitter. Accordingly, one of ordinary skill in the art at the time the invention was made would have found it obvious to include a control electrode in order to focus the electron beams extracted by the gate electrode, providing an improved display.

Regarding claim 13, the substrate 1201 is integrated with the vacuum container (see Fig. 12).

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Amey, Jr. et al. (US 6,409,567) reads on claims 9-13.

Shiratori et al. (US 6,486,609) teaches the use of carbon particles having a 6-membered carbon ring as emitters.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-24597. **The fax phone number for this Group is (703) 872-9306.**

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Anthony.perry@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly

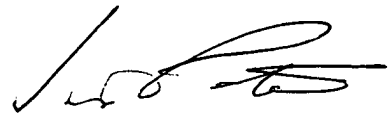
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set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Anthony Perry
Patent Examiner
Art Unit 2879
March 11, 2004



Vip Patel
Primary Examiner
Art Unit 2879